Toxicology and Applied Pharmacology

UNIVERSITY OF HAWAII LIBRARY
LIBRARY USE ONLY

Official Journal of the Society of Toxicology

Editorial Board

ARY O. AMDUR
ERNARD A. BECKER
ARL-FRIEDRICH BENITZ
ULIUS M. COON
LAN K. DONE
OHN DOULL
ENNETH P. DUBOIS
ANS L. FALK
OBERT B. FORNEY
AMES M. FUJIMOTO
EON GOLBERG
ACK E. GRAY
OLIN G. HUNTER
ERMAN F. KRAYBILL
AROLD N. MACFARLAND
AUL A. MATTIS
AMES A. MILLER
HELDON D. MURPHY
AUL M. NEWBERNE
AMES M. PRICE
OGER P. SMITH
RED W. SNYDER
AWRENCE C. WEAVER

Editor:

EARL H. DEARBORN

Associate Editors:

SEYMOUR L. FRIESS
DONALD H. KAUMP
THOMAS S. MIYA
JAMES W. NEWBERNE
GABRIEL L. PLAA

Volume 16, 1970

Academic Press
New York and London

Copyright ©, 1970, by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, by retrieval system or any other means, without written permission from the publishers.

CONTENTS OF VOLUME 16

NUMBER 1, JANUARY 1970

H. T. Nagasawa, C. S. Alexander, F. N. Shirota, H. Ghobrial, K. F. Swingle and R. F. Derr. Metabolic Basis for the Lack of Nephrotoxicity of Acetylated Puromycin Aminonucleoside in Rats 1

J. L. Schardein, D. H. Kaump, E. T. Woosley, and M. M. Jellema. Long-Term Toxicologic and Tumorigenesis Studies on an Oral Contraceptive Agent in Albino Rats 10

Jane F. Robens. Teratogenic Activity of Several Phthalimide Derivatives in the Golden Hamster 24

Harbans Lal, Surendra K. Puri, and George C. Fuller. Impairment of Hepatic Drug Metabolism by Carbon Tetrachloride Inhalation 35

Joseph H. Fleisher, Larrel W. Harris, Gail R. Miller, Norman C. Thomas, and William J. Cliff. Antagonism of Sarin Poisoning in Rats and Guinea Pigs by Atropine, Oximes, and Mecamylamine 40

James R. Fouts. Some *in Vitro* Conditions That Affect Detection and Quantitation of Phenobartital-Induced Increases in Hepatic Microsomal Drug-Metabolizing Enzyme Activity 48

Fred W. Oberst, James W. Crook, Steven F. Swaim, F. Prescott Ward, William S. Koon, and Nelson P. Musselman. Toxic Effects of High Concentrations of Bromobenzylnitrile Vapor in Various Animal Species 66

Anthony T. Tu and Manabu Homma. Toxicologic Study of Snake Venoms from Costa Rica 73

O. A. Levander, M. L. Young, and S. A. Meeks. Studies on the Binding of Selenium by Liver Homogenates from Rats Fed Diets Containing Either Casein Or Casein Plus Linseed Oil Meal 79

Jane F. Robens. Teratogenic Effects of Hypervitaminosis A in the Hamster and the Guinea Pig 88

Martin Sherman and R. B. Herrick. Acute Toxicity of Five Insect Chemosterilants, Hemel, Hempa, Tepa, Metepa, and Methotrexate, for Cockerels 100

James A. Vick and Eugene H. Herman. Cardiovascular Effects of Guanazole 108

James E. Gibson and Bernard A. Becker. Placental Transfer, Embryotoxicity and Teratogenicity of Thallium Sulfate in Normal and Potassium-Deficient Rats 120

L. J. Jenkins, Jr., R. A. Jones, R. A. Coon, and J. Siegel. Repeated and Continuous Exposures of Laboratory Animals to Trichlorofluoromethane 133

Charles F. Simpson, J. M. Kling, and Roger F. Palmer. β-Aminopropionitrile-Induced Dissecting Aneurysms of Turkeys: Treatment with Propranolol 143

S. S. Hotta and Barbara S. Levinson. The Effects of Aminooxyacetate on the Metabolism of Glucose and Glutamate by Homogenates of Guinea Pig Cerebral Hemispheres 154

Vergil H. Zerm and Stanley J. Carpenter. Teratogenic and Embryopathic Effects of Indium, Gallium, and Germanium 166

D. G. Hoffman, H. M. Worth, J. L. Emmerson, and R. C. Anderson. Stimulation of Hepatic Drug-Metabolizing Enzymes by Chlorophenothane (DDT); the Relationship to Liver Enlargement and Hepatotoxicity in the Rat 171

S. I. Smith, C. W. Weber, and B. L. Reid. The Effect of Injection of Chlorinated Hydrocarbon Pesticides on Hatchability of Eggs. 179

James M. Fujimoto and Richard I. H. Wang. A Method of Identifying Narcotic Analgesics in Human Urine after Therapeutic Doses 186

R. Jović and B. Bošković. Antidotal Action of Pyridium Oximates in Poisoning by *O,O*-Diethyl-*S*-[2-(*N*-Methyl-*N*-Phenylamino)Ethyl] Thiophosphonate Methylsulfomethylate (GT-45) and Its Two New Analogs 194

C. H. Hine, F. H. Meyers, and R. W. Wright. Pulmonary Changes in Animals Exposed to Nitrogen Dioxide, Effects of Acute Exposures 201

Edmund F. Murtha, Joseph H. Fleisher, Mary A. Torre, and Terry A. Innerebner. Reactivatability of Soman-Inhibited End Plate Cholinesterase and Neuromuscular Transmission 214

Marjorie B. McTernan, Karen M. Hand, George A. Braun, Estelle A. Siegmund, and Donald A. Willigan. Inhibitory Effects of Alkyl 2-Cyanoacrylate Tissue Adhesives on Rat Liver Cytoplasm Preparations 227

Eldon M. Boyd and G. Carro-Ciampi. The Oral 100-Day LD50 Index of Phenacetin in Guinea Pigs 232

Felix A. de la Iglesia, Juan C. Sosa-Lucero, and George Lumb. Ultrastructural Hepatic Changes Following the Administration of Benzylideneyohimbol 239

H. C. Stanton, Z. Bowman, and C. M. Cooper. Effects of Monoamine Oxidase Inhibitors on Isoproterenol-Induced Cardiomegaly in Rats 256

L. Friedman, C. M. Kunin, N. Nelson, J. L. Whittenberger, and J. G. Wilson. Panel on Reproduction Report on Reproduction Studies in the Safety Evaluation of Food Additives and Pesticide Residues 264

Letters to the Editor

Carrol S. Weil. Comments on "Teratology in Toxicology" 297

Bernard A. Becker. Reply by Bernard A Becker 298

Announcements 299

Errata 301

NUMBER 2, MARCH 1970

Donald L. Opdyke, Clyde M. Burnett, and James C. Munch. Toxicity of Combinations of Glyceryl Trinitrate and Sympathomimetics 303

Ian J. Tinsley, Jesse F. Bone, and Edward C. Bubl. The Growth, Reproduction, Longevity, and Histopathology of Rats Fed Gamma-Irradiated Carrots 306

Alan G. Silverman, Howard I. Wilner, and Ronald Okun. A Case of Gastrointestinal Bleeding following the Use of Tolazoline 318

S. S. Epstein, K. Fujii, J. Andrea, and N. Mantel. Carcinogenicity Testing of Selected Food Additives by Parenteral Administration to Infant Swiss Mice 321

E. H. Herman, P. Schein, and R. M. Farmar. Influence of Pharmacologic or Physiologic Pretreatment on Acute Daunomycin Cardiac Toxicity in the Hamster 335

William W. Carlton and John Tuite. Mycotoxicosis Induced in Guinea Pigs and Rats by Corn Cultures of *Penicillium virdicatum* 345

George A. Elliott and Jack E. Gray. Morphologic Effects of Mildly Irritating Topical Agents 362

E. E. Vogin, R. E. Goldhamer, J. Scheimberg, S. Carson, and G. C. Boxill. Teratology Studies in Rats and Rabbits Exposed to an Isoproterenol Aerosol 374

Wallace L. Guess. Tissue Reactions to 2-Chloroethanol in Rabbits 382

Faye J. Bowman and E. C. Foulkes. Effects of Uranium on Rabbit Renal Tubules.... 391

H. G. Verschuuren, E. J. Ruitenberg, F. Peetoom, P. W. Helleman, and G. J. van Esch. Influence of Triphyenyltin Acetate on Lymphatic Tissue and Immune Responses in Guinea Pigs 400

Herbert H. Cornish, Mary L. Barth, and Vernon N. Dodson. Isozyme Profiles and Protein Patterns in Specific Organ Damage 411

Richard J. Kociba and Stuart D. Sleight. Nitrite Toxicosis in the Ascorbic Acid-Deficient Guinea Pig 424

Choo D. Chin. Neutralization of Shellfish Poison by Chemical Disinfectants 430

Robert N. Saunders, Tom S. Miya, and William F. Bousquet. Stimulation of DOPA-^{14}C Incorporation into Melanoma by Chlorpromazine and Reserpine 434

H. F. Smyth, Jr., C. S. Weil, M. D. Woodside, J. B. Knaak, L. J. Sullivan, and C. P. Carpenter. Experimental Toxicity of a High Molecular Weight Poly(ethylene Oxide) 442

R. E. Menzer. Effect of Chlorinated Hydrocarbons in the Diet on the Toxicity of Several Organophosphorus Insecticides 446

Eugene E. Vogin, Steven Carson, Allen Palanker, Gaston E. Cannon, and Merles Pindell. Toxicologic, Reproductive, and Teratogenic Studies with a Tetracycline Phosphate Complex-Sulfamethizole Formulation 453

S. O. Kayaalp, N. Renda, S. Kaymakcalan, and A. Özer. Tyramine Content of Some Cheeses 459

Roger Morazain and Philip Rosenberg. Lipid Changes in Tri-*o*-cresylphosphate-Induced Neuropathy..... 461

F. E. Guthrie and W. E. Donaldson. Distribution of DDT and Dieldrin in the Avian Embryo..... 475

KEIJI FUJII, HERBERT JAFFE, YVONNE BISHOP, ELSIE ARNOLD, DOUGLAS MACKINTOSH, AND SAMUEL S. EPSTEIN. Structure-Activity Relations for Methylenedioxphenyl and Related Compounds on Hepatic Microsomal Enzyme Function, as Measured by Prolongation of Hexobarbital Narcosis and Zoxazolamine Paralysis in Mice.. 482

TED A. LOOMIS. Symposium on the Evaluation of the Safety of Food Additives and Chemical Residues: Introduction 495

LEO FRIEDMAN. Symposium on the Evaluation of the Safety of Food Additives and Chemical Residues: II. The Role of the Laboratory Animal Study of Intermediate Duration for Evaluation of Safety 498

PHILIPPE SHUBIK. Symposium on the Evaluation of the Safety of Food Additives and Chemical Residues: III. The Role of the Chronic Study in the Laboratory Animal for Evaluation of Safety 507

IRVING LADIMER. Symposium on the Evaluation of the Safety of Food Additives and Chemical Residues: IV. Public Opinions and Attitudes Regarding Additives and Chemical Residues 513

DOROTHY E. WOOLLEY. Effects of DDT and of Drug-DDT Interactions on Electroshock Seizures in the Rat 521

CLARA H. WILLIAMS. β-Glucuronidase Activity in the Serum and Liver of Rats Treated with Parathion 533

SUMNER M. ROBINSON AND JANE MILBERG. Alterations of *d*-Amphetamine Sulfate Lethality and Body Temperature in Mice during Acute Altitude Exposure 540

J. F. COLE, L. M. KLEVAY, AND M. R. ZAVON. Endrin and Dieldrin: A Comparison of Hepatic Excretion in the Rat 547

GARETH OWEN, T. H. F. SMITH, AND H. P. K. AGERSBORG, JR. Toxicity of Some Benzodiazepine Compounds with CNS Activity 556

NUMBER 3, MAY 1970

VO SETNIKAR AND VINCENZO DE FINA. Toxicologic Investigations on Moquizone (1-Morpholino-acetyl-3-phenyl-2, 3-dihydro-4(1*H*)-quinazolinone) 571

G. MUACEVIC, E. DIRKS, H. J. KINKEL, AND F. LEUSCHNER. Anticholinesterase Activity of Bromophos in Rats and Dogs 585

ACQUES DREYFUSS, DOROTHY A. PFEFFER, AND ERIC C. SCHREIBER. The Effect of Analgesics on the Hexobarbital Sleeping Times in Rats, Dogs, and Rhesus Monkeys: A Species Difference 597

EUGENE E. VOGIN, STEVEN CARSON, GASTON CANNON, CHARLES R. LINEGAR, AND LIONEL F. RUBIN. Chronic Toxicity of DMSO in Primates 606

R. W. RUDDON AND A. M. COHEN. Alteration of Enzyme Activity in Rat Liver following the Acute and Chronic Administration of Nicotine 613

GEORGE FEUER AND VIOLETA GRANDA. Antagonistic Effect of Foreign Compounds on Microsomal Enzymes of the Liver of the Rat 626

G. E. DAGLE, D. A. BRODIE, AND B. G. BAUER. Comparison of Gross and Microscopic Gastric Lesions Produced in Rats after Single Doses of Aspirin and 2-Deoxyglucose 638

R. A. COON, R. A. JONES, L. J. JENKINS, JR., AND J. SIEGEL. Animal Inhalation Studies on Ammonia, Ethylene Glycol, Formaldehyde, Dimethylamine, and Ethanol 646

DUANE G. WENZEL AND MARY H. RICHARDS. Effects of Chronic Nicotine, Acute Hypoxia, and Their Interactions of Myocardial Enzymes 656

R. T. LOUIS-FERDINAND AND G. C. FULLER. The Mechanism of the Biologic Activity of a series of Nitroolefins 668

H. F. SMYTH, JR., C. S. WEIL, J. M. KING, J. B. KNAAK, L. J. SULLIVAN, AND C. P. CARPENTER. Oral Toxicity and Excretion of Four Commercial Polyoxyalkylene Glycol Compounds 675

SHIRLEY E. FREEMAN AND R. J. TURNER. Maculotoxin, a Potent Toxin Secreted by *Octopus maculosus* Hoyle 681

OLAV M. BAKKE AND RONALD R. SCHELINE. Hydroxylation of Aromatic Hydrocarbons in the Rat 691

STEVEN D. COHEN AND SHELDON D. MURPHY. Comparative Potentiation of Malathion by Triorthotolyl Phosphate in Four Classes of Vertebrates 701

SHRI N. GIRI AND ALAN B. COMBS. Sulfur-Containing Compounds and Tolerance in the Prevention of Certain Metabolic Effects of Phenylthiourea 709

G. STUART WIBERG, H. LOCKSLEY TRENHOLM, AND BLAKE B. COLDWELL. Increased Ethanol Toxicity in Old Rats: Changes in LD50, *in Vivo* and *in Vitro* Metabolism, and Liver Alcohol Dehydrogenase Activity 718

BERESFORD H. STOCK, ALFRED R. HANSEN, AND JAMES R. FOUTS. Stimulation of Hepatic Microsomal Aniline *p*-Hydroxylase Activity by Dimethyl Sulfoxide Administration to Rats 728

ALAN G. SILVERMAN, HOWARD I. WILNER, AND RONALD OKUN. A case of Accidental Parenteral Injection of Povan 740

M. JAKUBOWSKI, J. PIOTROWSKI, AND BARBARA TROJANOWSKA. Binding of Mercury in the Rat: Studies Using $^{203}HgCl_2$ and Gel Filtration 743

JUSTYNA M. WIŚNIEWSKA, BARBARA TROJANOWSKA, J. PIOTROWSKI, AND M. JAKUBOWSKI. Binding of Mercury in the Rat Kidney by Metallothionein 754

GUENTHER VOSS AND KLAUS SACHSSE. Red Cell and Plasma Cholinesterase Activities in Microsamples of Human and Animal Blood Determined Simultaneously by a Modified Acetylthiocholine/DTNB Procedure 764

GILBERT KASIRSKY AND LORRAINE LOMBARDI. Comparative Teratogenic Study of Various Corticoid Ophthalmics 772

ETHARD W. VAN STEE, KENNETH C. BACK, AND R. BARRY PRYNN. Alteration of the Electroencephalogram during Bromotrifluoromethane Exposure 779

LINCOLN CHIN, ALBERT L. PICCHIONI, AND BRUCE R. DUPLISSE. The Action of Activated Charcoal on Poisons in the Digestive Tract 786

J. R. ALLEN, L. A. CARSTENS, AND D. H. NORBACK. Ultrasctructural and Biochemical Changes in the Liver of Monocrotaline Intoxicated Chickens 800

JAMES E. WYNN, BART VAN'T RIET, AND JOSEPH F. BORZELLECA. The Toxicity and Pharmacodynamics of EGTA: Oral Administration to Rats and Comparisons with EDTA 807

L. J. JENKINS, JR., R. A. JONES, AND J. SIEGEL. Long-Term Inhalation Screening Studies of Benzene, Toluene, *o*-Xylene, and Cumene on Experimental Animals 818

ANNOUNCEMENT 824

AUTHOR INDEX 825

SUBJECT INDEX 827